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EXAMINER

FRISBY, KESHA

ART UNIT

PAPER NUMBER

3714

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/807,047	Applicant(s) FEYGIN ET AL.	
	Examiner KESHA FRISBY	Art Unit 3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17-23, 34 and 36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-23, 34 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

After the amendment filed on 5/22/2008, claims 1-24, 26-34 & 36 are pending.

Information Disclosure Statement

1. The information disclosure statement filed 12/4/2007 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the Foreign Document FR2622721A is not translated. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Specification

2. The disclosure is objected to because of the following informalities: The originally filed disclosure fails in the written description to include where the receiver has not offset degrees of freedom and where the axes of all of said plurality degrees of freedom of said receiver intersect one another.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3714

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-15, 17-23, 34 & 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Bevirt et al. (U.S. Patent Number 6,705,871).

Referring to claim 1, Bevirt et al. discloses an apparatus comprising a receiver wherein: said receiver (Fig. 2a: apparatus 25) has at least three degrees of freedom (A, B & C) that enable said receiver to move in three different ways about three different axes (column 8 line 33-column 9 line 11), wherein axes of said three degrees of freedom intersect (at point P); and said receiver receives an end effector (user object 44 or 18), wherein said end effector removably couples to said receiver (Figs. 1-3 & the associated text).

Referring to claim 2, Bevirt et al. discloses further comprising said end effector, wherein said end effector comprises a catheter (column 7 lines 32-35).

Referring to claim 3, Bevirt et al. discloses wherein two of said three degrees of freedom are rotational (A & B) and one of said three degrees of freedom is translational (C).

Referring to claim 4, Bevirt et al. discloses further comprising pseudo skin (barrier 22), wherein said receiver is disposed beneath said pseudo skin (column 6 line 66-column 7 line 1).

Referring to claim 5, Bevirt et al. discloses further comprising said end effector, wherein said pseudo skin (barrier 22) lies between said end effector and said receiver (Figs. 1-

Art Unit: 3714

3), and wherein to simulate a vascular access procedure, said end effector is inserted through an opening in said pseudo skin to couple with said receiver (Figs. 1-3 & the associated text).

Referring to claim 6, Bevirt et al. discloses further comprising: a plurality of sensors (column 9 lines 22-25), wherein said sensors: monitor movement of said receiver with respect to said degrees of freedom, wherein said movement is indicative of the position and orientation of said end effector (column 12 lines 1-61); and generate signals indicative of said monitored movement (column 12 lines 1-61); and a data processing system, wherein said data processing system receives signals generated by said sensors (computer 16).

Referring to claim 7, Bevirt et al. discloses further wherein said data processing system determines a position and orientation of said end effector based on said received signals (column 12 lines 1-61).

Referring to claim 8, Bevirt et al. discloses wherein said receiver comprises a force-feedback assembly, wherein said force-feedback assembly generates a resistance to movement of said end effector (column 14 lines 48-52).

Referring to claim 9, Bevirt et al. discloses wherein said force-feedback assembly comprises a motor (column 13 lines 5-13).

Referring to claim 10, Bevirt et al. discloses an end effector (user object 44 or 18); and a movable member (linear axis member 40), wherein: said end effector reversibly couples to said movable member to simulate a vascular access procedure (Fig. 1 & the associated text); and said movable member moves along a linear path (C) in response

Art Unit: 3714

to manipulation of said end effector (Figs. 2a, 2b, the associated text & column 9 lines 36-38).

Referring to claims 11-13, Bevirt et al. discloses wherein said movable member is coupled to a cable (capstan cable drive and/or cable drive system) (claim 11) and wherein said cable is couple to a motor (DC servo motors) (claim 12); wherein, responsive to a control signal, said motor generates a resistance to movement of said movable member (column 14 lines 48-52) (claims 13).

Referring to claim 14, Bevirt et al. discloses further comprising a plurality of pulleys (capstan band drive mechanisms 72) disposed on a frame (apparatus 25); said pulleys engage said cable (Figs. 5a-5c); and said pulleys are arranged so that a tension in said cable aligns with said linear path along which said movable member moves (Figs. 5a-5c & the associated text).

Referring to claim 15, Bervirt et al. discloses wherein said movable member comprises a pulley, wherein said movable member is coupled to said cable via said pulley (Figs. 5a-5c & the associated text).

Referring to claim 17, Bevirt et al. discloses further comprising a housing (barrier 22), wherein said movable member is disposed within said housing and said end effector is disposed outside of said housing (Fig. 1 & column 6 line 66 – column 7 line 1).

Referring to claim 18, Bevirt et al. discloses further comprising pseudo skin, wherein said pseudo skin is substantially co-planar with a surface of said housing (Fig. 1).

Referring to claim 19, Bevirt et al. discloses a frame (apparatus 25); an arrangement (gimbal apparatus 38) for providing two orthogonal axes of rotation (A & B) for said

Art Unit: 3714

frame, wherein said frame is coupled to said arrangement (Figs. 1-3); and a movable member (linear axis member 40), wherein: said movable member receives an end effector during a vascular access procedure (Figs. 1-3); said movable member moves along a linear path in a region defined by said frame (Figs. 2A & 2B); and said linear path intersects said two orthogonal axes of rotation of said frame (Fig. 2a, 2b & the associated text).

Referring to claim 20, Bevirt et al. discloses further comprising a force-feedback assembly, wherein said force-feedback assembly is coupled to said movable member, and wherein said force-feedback assembly imparts a force that resists forward motion of said movable member by said end effector (column 14 lines 48-52).

Referring to claims 21-23, Bevirt et al. discloses wherein said force-feedback assembly comprises: a motor (DC servo motors); and a cable, wherein said cable is coupled to said motor (capstan cable drive and/or cable drive system) (claim 21), wherein said movable member includes a rolling-contact element, wherein said cable is coupled to said rolling-contact element (Figs. 5a-5c & the associated text) (claim 22) and further comprising a counterbalance (48a & 48b), wherein said counterbalance is coupled to said frame (Fig. 2a) (claim 23).

Referring to claim 34, Bevirt et al. discloses pseudo skin (barrier 22); and a receiver (apparatus 25) for coupling to an end effector (user object 44 or 18), wherein: said receiver is disposed beneath said pseudo skin (Figs. 1-3, the associated text and column 6 line 66-column 7 line 1); and said receiver comprises a force-feedback assembly (column 14 lines 48-52); and a movable member (linear axis member 40) that

Art Unit: 3714

is free to move independently of surrounding structure, but only along a linear path (C), wherein: (a) said movable member is coupled to said force-feedback assembly (column 14 lines 48-52)); said end effector removably couples to said movable member (Figs. 1-3 & the associated text); when said movable member is coupled to said end effector, movement of said end effector causes said movable member to move (Figs. 1-3 & the associated text).

Referring to claim 36, Bevirt et al. discloses further comprising a data processing system (computer system 16), wherein, responsive to a signal from said data processing system, said force-feedback assembly generates a force that opposes movement of said movable member and said end effector, in at least a first direction (column 14 lines 48-52).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 16, 24 & 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bevirt et al..

Referring to claim 16, Bevirt et al. discloses said movable member, and wherein said end effector couple to said movable member (Fig. 1-3 & the associated text). Bevirt et

Art Unit: 3714

al. does not explicitly state wherein said movable member comprises a magnet, and wherein said end effector couples to said movable member via said magnet.

At the time the invention was made, it would have been obvious matter of design choice to a person of ordinary skill in the art to have said movable member comprise a magnet and have said movable member connected to said end effector by a magnet because Applicant has not disclosed that having adaptive architecture on a second computer provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Bevirt's system, and applicant's invention, to perform equally well with either the extending through the remote pivot point P taught by Bevirt et al. or the claimed wherein said movable member comprises a magnet, and wherein said end effector couples to said movable member via said magnet because both components would perform the same function connecting the two components together.

Therefore, it would have been prima facie obvious to modify Bevirt's to obtain the invention as specified in claim 16 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Bevirt.

Referring to claim 24, Bevirt et al. discloses pseudo skin (barrier 22); and a receiver (apparatus 25) for coupling to an end effect (user object 44 or 18), wherein: a said end effector is coupled to said receiver (Figs. 1-3 & the associated text); said receiver is disposed beneath and at least partially covered by said pseudo skin (column 6 line 66-column 7 line 1); and said receiver has no offset degrees of freedom (A-D, Figs. 2a, 2b

Art Unit: 3714

& the associated text. Bevirt et al. does not explicitly state a magnetic force used for coupling.

At the time the invention was made, it would have been obvious matter of design choice to a person of ordinary skill in the art to have a magnetic force used for coupling because Applicant has not disclosed that having adaptive architecture on a second computer provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Bevirt's system, and applicant's invention, to perform equally well with either the extending through the remote pivot point P taught by Bevirt et al. or the claimed magnetic force used for coupling because both components would perform the same function connecting the two components together.

Therefore, it would have been prima facie obvious to modify Bevirt's to obtain the invention as specified in claim 16 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Bevirt.

Referring to claim 26, Bevirt et al. discloses wherein said end effector is selected from the group consisting of a catheter, a needle, and a combined catheter and needle (column 7 lines 32-35).

Referring to claim 27, Bevirt et al. discloses wherein said receiver (apparatus 25) has three degrees of freedom (A-C).

Referring to claim 28, Bevirt et al. discloses wherein two of said three degrees of freedom are rotational (A & B) and one of said three degrees of freedom is translational

Art Unit: 3714

(C).

Referring to claim 29, Bevirt et al. discloses wherein said receiver comprises a movable member (linear axis member 40), and wherein said movable member is movable along a linear path (C).

Referring to claim 30, Bevirt et al. discloses wherein said receiver comprises a movable member, and wherein said movable member is physically adapted for rolling contact during movement (Figs. 5a-5c & the associated text).

Referring to claim 31, Bevirt et al. discloses wherein said receiver is gravitationally balanced (gravity holds receiver in position).

Referring to claim 32, Bevirt et al. discloses further comprising said end effector (user object 44 or 18), wherein, until coupled to said receiver by a user, said end effector is disposed above said pseudo skin (barrier 22 & Figs. 1-3 & the associated text).

Referring to claim 33, Bevirt et al. discloses wherein said receiver further comprises: a movable member, wherein said movable member couples to said end effector (Figs. 1-3); and a force-feedback assembly, wherein said force-feedback assembly is coupled to said movable element (column 14 lines 48-52).

Response to Arguments

7. Applicant's arguments with respect to claims 1-24, 26-34 & 36 have been considered but are moot in view of the new ground(s) of rejection.

Citation of Pertinent Prior Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 3714

Bevirt et al. (U.S. Patent Number 7,249,951) teaches a method and apparatus for providing an interface mechanism for a computer simulation.

Bevirt et al. (U.S. Patent Number 6,024,576) teaches a hemispherical, high bandwidth mechanical interface for computer systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KESHA FRISBY whose telephone number is (571)272-8774. The examiner can normally be reached on Monday-Friday 8am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on 571-272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. F./

Examiner, Art Unit 3714

/XUAN M. THAI/

Supervisory Patent Examiner, Art Unit 3714